K 2817EU

Claims

1. A nucleic acid molecule comprising
   - (a) a nucleic acid sequence encoding the monocyte-chemoattractant-protein-1 (MCP-1) or a protein having the biological activity of the monocyte-chemoattractant-protein-1 (MCP-1); and
   - (b) a 3`-DHSR comprising a nucleic acid molecule which is located 2430 bp to 3019 bp downstream of the transcriptional start site of the MCP-1 gene, or

     a 3'-DHSR comprising a nucleic acid molecule which is located 1550 bp to 1749 downstream of the transcriptional start site of the MCP-1 gene, or

     a 3'-DHSR comprising a nucleic acid molecule which is located 750 bp to 899 bp downstream of the transcriptional start site of the MCP-1 gene, or

     a 5'-DHSR comprising a nucleic acid molecule which is located 500 bp to 251 bp upstream of the transcriptional start site of the MCP-1 gene, or

     a 5'-DHSR comprising a nucleic acid molecule which is located 1300 bp to 1001 bp upstream of the transcriptional start site of the MCP-1 gene, or

     a 5'-DHSR comprising a nucleic acid molecule which is located 5050 bp to 4751 bp upstream of the transcriptional start site of the MCP-1 gene, or

     a S1 hypersensitive site comprising a nucleic acid molecule which is located in the 1st intron (+180 - +350) of the MCP-1 gene.

2. The nucleic acid molecule of claim 1, wherein the 3'-DHSR comprises the nucleic acid sequence from pos. +2430 to +3019 as depicted in Figure 6.

3. The nucleid molecule of claim 2, wherin the 3'-DHSR comprises the nucleic acid sequence GGAAGGTTGAGTCAAGGATT.

4. The nucleic acid molecule of claim 3, wherein the 3'-DHSR comprises the nucleic acid sequence TGAGTCA.

5. The nucleic acid molecule of any one of claims 1 to 4, wherein the hypersensitivity sequences (b) contain mutations resulting in a modified DNAse I hypersensitivity, S1 hypersensitivity and/or altered interaction with transcription factors.

6. The nucleic acid molecule of claim 5, wherein the transcription factor is AP-1, SP1, NF-IL6 or NF-kappa B.

7. A recombinant vector containing the nucleic acid molecule of any one of claim 1 to 6.

8. The recombinant vector of claim 7 wherein the nucleic acid molecule is operatively linked to regulatory elements allowing transcription and synthesis of a translatable RNA in prokaryotic and/or eukaryotic host cells.

9. A recombinant host cell which contains a nucleic acid molecule according to any one of claims 1 to 6 or the recombinant vector of claim 7 or 8.

10. The recombinant host cell of claim 9, which is a mammalian cell, a bacterial cell, an insect cell or a yeast cell.

11. A pharmaceutical composition comprising a compound which is capable of regulating the expression of the MCP-1 gene by directly or indirectly interacting with the nucleic acid sequence (b) of any one of claims 1 to 6 or the recombinant vector of claim 7 or 8.

12. The pharmaceutical composition of claim 11, wherein the compound is a protein capable of interacting with a transcription factor, in particular AP-1, or a nucleic acid molecule encoding said protein.

13. The pharmaceutical composition of claim 12, wherein the compound is *jun, fra-1, ATF-2, jab-1, fra-2* or a mixture thereof.

14. Use of the compounds as defined in any one of claims 11 to 13 for the preparation of a medicament for the treatment of atherosclerosis or cancer.

15. Use according to claim 14, wherein the cancer is a cervical carcinoma.